

Remarks

Before this Amendment, claims 1-15 and 53-66 were pending. By this Amendment, claims 10-12 and 64 have been canceled and claims 67-70 have been added. Accordingly, claims 1-9, 13-15, 53-63, and 65-70 are now pending.

Support for new claims 67-70 is found in the specification as follows:

Claim 67: Examples 1 and 2, pages 25-26

Claim 68: page 27, lines 14-18, particularly lines 14-15

Claim 69: page 27, lines 14-18, particularly line 18; page 4, lines 2-4; page 4, lines 6-9

Claim 70: Example 4, pages 27-28

Claims 1-9, 13-15, and 53-57 have been amended. Support for these amendments is found in the specification as follows:

Claim 1: page 13, line 10 (crosslinked HEMA); page 15, lines 11; page 19, lines 3-4 (surface features that have elevated portions and recessed portions)

Claim 2: page 14, lines 20-21 (holes or cavities with a cross-sectional area of from approximately $1\ \mu\text{m}^2$ to approximately $2\ \text{mm}^2$)

Claim 3: merely deletes the first recitation of "polymer gel" as surplusage

Claim 4: merely deletes "polymer gel" as surplusage since claim 4 depends from claim 2 and claims 2 is drawn to a "polymer gel"

Claims 5-9: same as claim 4

Claims 13 and 14: change in dependency

Claim 15: deletes "polymer gel" and changes dependency

Claims 53 and 54: page 15, lines 11; page 19, lines 3-4 (surface features that have elevated portions and recessed portions)

Claim 55: deletes "polymer gel"

Claims 56 and 57: page 15, lines 11; page 19, lines 3-4 (surface features that have elevated portions and recessed portions)

Page 2 of the Office Action stated that claims 7 and 8 and claims 53 and 54 are duplicate claims. Present claims 7 and 8 recite, through their dependencies, "holes or cavities with a cross-sectional area of from approximately $1\ \mu\text{m}^2$ to approximately $2\ \text{mm}^2$." Present claims 53

and 54 do not recite this limitation. Thus, present claims 7 and 8 are not duplicate claims of present claims 53 and 54.

The rejections under 35 U.S.C. §102

U.S. Patent No. 5,961,479 (Reeves)

Claims 1-4, 10-11, 14-15, 55, 60, and 62-64 were rejected as being anticipated by Reeves.

The Applicant disagrees with this rejection and respectfully requests that it be withdrawn for the reasons given below.

Claim 1

Present claim 1 requires that the patterning transfer element comprises a “crosslinked HEMA copolymer.”

Reeves does not disclose copolymers or crosslinking. Thus, Reeves does not anticipate claim 1.

Claims 2-4

Present claims 2-4 require that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\text{ }\mu\text{m}^2$ to approximately 2 mm^2 .” Reeves discloses a therapeutic mask for treating facial wounds. The Reeves mask is designed to be worn on the face of a patient and thus has openings for the patient’s eyes, nose, and mouth. See Figure 1 and Col. 1, l. 64 to Col. 2, l. 3. Given the purpose of the holes in the Reeve’s mask, such holes cannot be so small as to have “a cross-sectional area of from approximately $1\text{ }\mu\text{m}^2$ to approximately 2 mm^2 .” Thus, Reeves lacks this limitation of claims 2-4 and therefore does not anticipate claims 2-4.

Claims 10 and 11

Claims 10 and 11 have been canceled.

Claims 14, 15, and 55

Present claims 14, 15, and 55 depend from claim 2 and thus require that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\text{ }\mu\text{m}^2$ to approximately 2 mm^2 .” Therefore, for the same reason as discussed above for claim 2, Reeves does not anticipate claims 14, 15, and 55 either.

Claims 60 and 62

Present claims 60 and 62 depend from claim 1 and thus require that the patterning transfer element comprises a “crosslinked HEMA copolymer.” Therefore, for the same reason as discussed above for claim 1, Reeves does not anticipate claims 60 and 62 either.

Claim 63

Present claim 63 depends from claim 2. Therefore, for the same reason as discussed above for claim 2, Reeves does not anticipate claim 63 either.

Claim 64

Claim 64 has been canceled.

U.S. Patent No. 3,220,960 (Wichterle)

Claims 1-4, 9-11, 14-15, 55-58, 60, and 62-64 were rejected as being anticipated by Wichterle.

The Applicant disagrees with this rejection and respectfully requests that it be withdrawn for the reasons given below.

Claim 1

Present claim 1 recites a “crosslinked HEMA copolymer.” Wichterle does not disclose HEMA. Thus, Wichterle does not anticipate claim 1.

Claims 2-4 and 9

Present claims 2-4 and 9 require that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\text{ }\mu\text{m}^2$ to approximately 2 mm^2 .” Wichterle does not disclose contact masks having holes of such dimensions. Thus, Wichterle lacks this limitation of claims 2-4 and 9 and therefore does not anticipate claims 2-4 and 9.

Claims 10 and 11

Claims 10 and 11 have been canceled.

Claims 14, 15, and 55

Present claims 14, 15, and 55 depend from claim 2 and thus require that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\text{ }\mu\text{m}^2$ to approximately 2 mm^2 .” Therefore, for the same reason as discussed above for claim 2, Wichterle does not anticipate claims 14, 15, and 55 either.

Claim 56

Present claim 56 recites a “HEMA copolymer.” Wichterle does not disclose HEMA. Thus, Wichterle does not anticipate claim 56.

Claims 57 and 58

Present claims 57 and 58 recite a “HEMA copolymer.” Wichterle does not disclose HEMA. Thus, Wichterle does not anticipate claims 57 and 58.

Claims 60 and 62

Present claims 60 and 62 depend from claim 1 and thus, like claim 1, require a “crosslinked HEMA copolymer.” Wichterle does not disclose HEMA. Thus, Wichterle does not anticipate claims 60 and 62.

Claim 63

Present claim 63 depends from claim 2. Therefore, for the same reason as discussed above for claim 2, Wichterle does not anticipate claim 63 either.

Claim 64

Claim 64 has been canceled.

U.S. Patent No. 4,361,657 (Atkinson)

Claims 1-4, 6-7, 9, 13, 15, 53, 55-57, 60, and 62-63 were rejected as being anticipated by Atkinson.

The Applicant disagrees with this rejection and respectfully requests that it be withdrawn for the reasons given below.

Claim 1

Present claim 1 is directed to a “patterning transfer element.” The Office Action stated that such language is of no patentable significance. “The limitation of ‘stamp’ and the preamble ‘polymer gel patterning element for patterning biological material’ are merely an intended use which does not carry any weight of patentability.” (Office Action, page 3)

The Applicant disagrees. “Patterning transfer element” is not just a statement of intended use. The recitation of “patterning transfer element” requires that the claimed element have a structure that is capable of imparting a pattern of biological materials on a substrate. See, e.g., the specification, at page 4, lines 12-13: “In accordance with one embodiment of the present invention, a polymer gel patterning element for patterning biological materials is provided.” [emphasis added]

This meaning of “patterning element” is reinforced throughout the specification. For example, page 7, lines 9-10, states: “The present invention provides patterning elements that are uniquely well suited for patterning biological materials in micro-arrays on a surface.” The ability to pattern biological materials requires that the patterning transfer element possess particular structural features on its surface. The specification teaches that the patterning transfer elements of the invention possess such surface features. See page 9, lines 6-8: “The low

viscosity of the starting material is advantageous because it enables the faithful reproduction of minute surface features from the molding surface onto the surface of the patterning element.” Such surface features are necessary for the patterning elements to be able to pattern biological materials, which the specification teaches is the function of patterning elements. See, e.g., page 13, line 22 to page 14, line 2: “For example, a hydrogel stamp is a good patterning element for patterning aqueous solutions of biological materials onto a substrate. The hydrogels are especially well suited for use as contact masks in the patterning of biological materials upon a substrate ...” [emphasis added]

Page 13, lines 4-9, also teach that patterning biological systems is the function of the patterning elements of the present invention.

The structure of polyHEMA allows for the absorption of water closely approximating that of human tissue. This property, in addition to polyHEMA’s resistance to degradation, permeability to metabolites, and relative inertness, make polyHEMA a useful material in patterning biological systems. In view of the foregoing, it will be appreciated that synthetic homo-, co- and ter- polymers that incorporate HEMA monomers are especially preferred hydrogels for making the patterning element of the present invention. [emphasis added]

The specification describes particular types of patterning transfer elements having particular structures that allow the patterning transfer elements to carry out their function of patterning biological materials. See page 3, lines 10-14; and page 14, lines 9-11 (contact masks with holes); page 14, lines 13-18 (diffusion masks with cavities). This further makes clear that the term “patterning transfer element” in the claims refers to structure, and does not simply specify an intended use for the claimed element.

Claim terms are to be given their broadest reasonable interpretation, but only to the extent that such an interpretation is consistent with the specification. The Federal Circuit has stated that claims must be interpreted in a manner that is consistent with the guidance provided by the teachings of the specification. See In re Morris, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997):

Since it would be unreasonable for the PTO to ignore any interpretive guidance afforded by the applicant's written description, ... the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their

ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification. [emphasis added]

See also Ex parte Maizel, 27 USPQ2d 1662, 1664 (Bd. Pat. App. & Int. 1993): “[D]uring prosecution the claims are given their broadest reasonable interpretation in light of the specification.”

In view of the disclosures in the specification referred to above, it is clear that the term “patterning transfer element” refers to particular structure in the element. It would be unreasonable to ignore the many teachings of the specification to this effect. Imparting no patentable significance to the recitation of “patterning transfer element” amounts to arguing that a patterning element may be used to pattern biological materials even though that patterning element does not necessarily have the structure needed to pattern biological materials. This is clearly an untenable argument and indicates that the Examiner’s claim interpretation is unreasonable.

“Patterning transfer element” is a limitation of the present claims that distinguishes the claimed subject matter from that disclosed in Atkinson. Atkinson discloses contact lenses. Contact lenses are articles with smooth surfaces, i.e., without surface features that could be used to pattern biological materials on a substrate. Since all the articles disclosed in Atkinson are contact lenses, Atkinson does not disclose “patterning transfer elements” since all the articles disclosed in Atkinson lack the surface features necessary for patterning biological materials that the specification teaches are present in “patterning transfer elements.”

Despite the discussion above, which the Applicant believes demonstrates that the recitation of the term “patterning transfer element” distinguishes the claims over Atkinson, claim 1 has been amended to make more explicit this distinction by the addition of the language “where the patterning transfer element has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element.”

Claims 2-4, 6, 7, 9, 13, and 15

Present claims 2-4, 6, 7, 9, 13, and 15 require that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\ \mu\text{m}^2$ to approximately $2\ \text{mm}^2$.” Atkinson does not disclose contact masks having holes of such dimensions because Atkinson only discloses contact lenses that have smooth surfaces, without holes. Thus, Atkinson lacks this limitation of claims 2-4, 6, 7, 9, 13, and 15 and therefore does not anticipate claims 2-4, 6, 7, 9, 13, and 15.

Claim 53

Present claim 53 is directed to a contact mask that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the contact mask.” Atkinson does not disclose contact masks having such surface features because Atkinson only discloses contact lenses that have smooth surfaces. Thus, Atkinson lacks this limitation of claim 53 and therefore does not anticipate claim 53.

Claim 55

Present claim 55 depends from claim 2 and therefore requires that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\ \mu\text{m}^2$ to approximately $2\ \text{mm}^2$.” Atkinson does not disclose contact masks having holes of such dimensions because Atkinson only discloses contact lenses that have smooth surfaces, without holes. Thus, Atkinson lacks this limitation of claim 2 and therefore does not anticipate claim 2.

Claim 56

Present claim 56 is directed to a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element.” Atkinson discloses contact lenses. Contact lenses are articles with smooth surfaces, i.e., without surface features that could be used to pattern biological materials on a substrate. Since all the articles disclosed in Atkinson are contact lenses, Atkinson does not disclose a “patterning transfer elements” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological

materials by the patterning transfer element” since all the articles disclosed in Atkinson lack the surface features necessary for patterning biological materials that the specification teaches are present in “patterning transfer elements.” Thus, Atkinson does not anticipate claim 56.

Claim 57

Present claim 57 is directed to a contact mask that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the contact mask.” Atkinson discloses contact lenses. Contact lenses are articles with smooth surfaces, i.e., without surface features that could be used to pattern biological materials on a substrate. Since all the articles disclosed in Atkinson are contact lenses, Atkinson does not disclose a contact mask that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the contact mask” since all the articles disclosed in Atkinson lack the surface features necessary for patterning biological materials required by claim 57. Thus, Atkinson does not anticipate claim 57.

Claims 60 and 62

Present claims 60 and 62 depend from claim 1. As shown above, Atkinson does not anticipate claim 1 and therefore Atkinson does not anticipate claims 60 and 62 either.

Claims 63

Present claim 63 depends from claim 2. As shown above, Atkinson does not anticipate claim 2 and therefore Atkinson does not anticipate claim 63 either.

U.S. Patent No. 6,113,629 (Ken)

Claims 1-4, 6, 8-9, 54-57, and 60 were rejected as being anticipated by Ken.

The Applicant disagrees with this rejection and respectfully requests that it be withdrawn for the reasons given below.

Claim 1

Present claim 1 is directed to a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element.” Ken discloses hydrogels of undisclosed structure that are inserted into the body to treat aneurysms. Ken does not disclose a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element” since the hydrogels disclosed in Ken are not disclosed as having the surface features necessary for patterning biological materials that the specification teaches are present in “patterning transfer elements.” Thus, Ken does not anticipate claim 1.

Claims 2-4, 6, 8, and 9

Present claims 2-4, 6, 8, and 9 require that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\ \mu\text{m}^2$ to approximately $2\ \text{mm}^2$.” Ken does not disclose the presence of any holes in the hydrogels disclosed in Ken. Thus, Ken lacks this limitation of claims 2-4, 6, 8, and 9 and therefore does not anticipate claims 2-4, 6, 8, and 9.

Claim 54

Present claim 54 requires that the contact mask “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the contact mask.” Ken does not disclose the presence of any such surface features in the hydrogels disclosed in Ken. Thus, Ken lacks this limitation of claim 54 and therefore does not anticipate claim 54.

Claim 55

Present claim 55 depends from 2 and therefore, like claim 2 discussed above, is not anticipated by Ken.

Claim 56

Present claim 56 is directed to a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element.” Ken discloses hydrogels of undisclosed structure

that are inserted into the body to treat aneurysms. Ken does not disclose a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element” since the hydrogels disclosed in Ken are not disclosed as having the surface features necessary for patterning biological materials that the specification teaches are present in “patterning transfer elements.” Thus, Ken does not anticipate claim 56.

Claim 57

Present claim 57 requires that the contact mask “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the contact mask.” Ken does not disclose the presence of any such surface features in the hydrogels disclosed in Ken. Thus, Ken lacks this limitation of claim 57 and therefore does not anticipate claim 57.

Claim 60

Present claim 60 depends from 1 and therefore, like claim 1 discussed above, is not anticipated by Ken.

U.S. Patent Application Publication 2002/0086423 (Takezawa)

Claims 2-3, 15, 55, 59, and 63-66 were rejected as being anticipated by Takezawa.

The Applicant disagrees with this rejection and respectfully requests that it be withdrawn for the reasons given below.

Claim 64 has been canceled.

Claims 2-3, 15, 55, 59, 63, 65, and 66

Present claims 2-3, 15, 55, 59, 63, 65, and 66 require that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\text{ }\mu\text{m}^2$ to approximately 2 mm^2 .” Takezawa is directed to collagen hydrogels that are not disclosed as having holes. Thus,

Takezawa lacks this limitation of claims 2-3, 15, 55, 59, 63, 65, and 66 and therefore does not anticipate claims 2-3, 15, 55, 59, 63, 65, and 66.

U.S. Patent No. 4,702,732 (Powers)

Claims 1-7, 9, 15, 53, 55-57, and 59-63 were rejected as being anticipated by Powers.

The Applicant disagrees with this rejection and respectfully requests that it be withdrawn for the reasons given below.

Claim 1

Present claim 1 is directed to a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element.” Powers discloses transdermal drug delivery devices having gel reservoirs that are polymeric matrices. So far as the surface of the reservoir is described in Powers, that surface appears to be smooth (see Figure 1, where the surface of the reservoir is part 22a or 22b (Col. 11, ll. 6-7 and ll. 9-10)). Powers does not disclose a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element” since the drug reservoirs disclosed in Powers do not have the surface features necessary for patterning biological materials that the specification teaches are present in “patterning transfer elements.” Thus, Powers does not anticipate claim 1.

Claims 2-7, 9, and 15

Present claims 2-7, 9, and 15 require that the contact mask have “holes or cavities with a cross-sectional area of from approximately $1\text{ }\mu\text{m}^2$ to approximately 2 mm^2 .” Powers does not disclose the presence of holes of the recited cross-sectional area in the drug reservoirs disclosed in Powers. Thus, Powers lacks this limitation of claims 2-7, 9, and 15 and therefore does not anticipate claims 2-7, 9, and 15.

Claim 53

Present claim 53 is directed to a contact mask that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the contact mask.” Powers discloses transdermal drug delivery devices having gel reservoirs that are polymeric matrices. So far as the surface of the reservoir is described in Powers, that surface appears to be smooth (see Figure 1, where the surface of the reservoir is part 22a or 22b (Col. 11, ll. 6-7 and ll. 9-10)). Powers does not disclose a contact mask that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the contact mask” since the drug reservoirs disclosed in Powers do not have the surface features necessary for patterning biological materials recited in present claim 53. Thus, Powers does not anticipate claim 53.

Claim 55

Present claim 55 depends from 2 and therefore, like claim 2 discussed above, is not anticipated by Powers.

Claim 56

Present claim 56 is directed to a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element.” Powers discloses transdermal drug delivery devices having gel reservoirs that are polymeric matrices. So far as the surface of the reservoir is described in Powers, that surface appears to be smooth (see Figure 1, where the surface of the reservoir is part 22a or 22b (Col. 11, ll. 6-7 and ll. 9-10)). Powers does not disclose a “patterning transfer element” that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the patterning transfer element” since the drug reservoirs disclosed in Powers do not have the surface features necessary for patterning biological materials that the specification teaches are present in “patterning transfer elements.” Thus, Powers does not anticipate claim 56.

Claim 57

Present claim 57 is directed to a contact mask that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the

contact mask.” Powers discloses transdermal drug delivery devices having gel reservoirs that are polymeric matrices. So far as the surface of the reservoir is described in Powers, that surface appears to be smooth (see Figure 1, where the surface of the reservoir is part 22a or 22b (Col. 11, ll. 6-7 and ll. 9-10)). Powers does not disclose a contact mask that “has surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials by the contact mask” since the drug reservoirs disclosed in Powers do not have the surface features necessary for patterning biological materials recited in present claim 53. Thus, Powers does not anticipate claim 57.

Claim 59

Present claim 59 depends from 2 and therefore, like claim 2 discussed above, is not anticipated by Powers.

Claims 60-62

Present claims 60-62 depend from 1 and therefore, like claim 1 discussed above, are not anticipated by Powers.

Claim 63

Present claim 63 depends from 2 and therefore, like claim 2 discussed above, is not anticipated by Powers.

The rejections under 35 U.S.C. §103(a)

Reeves

Claims 12 and 13 were rejected as being obvious over Reeves.

For the following reasons, the Applicant submits that Reeves does not make obvious any of the present claims. Therefore, the Applicant respectfully requests that this rejection be withdrawn.

The present claims can be placed into one of two groups, depending on whether they recite one or the other of the two limitations that are discussed below.

Claims 1, 53, 54, 56-58, and 60-62

Claims 1, 53, 54, 56-58, and 60-62 are directed to patterning elements or contact masks that have “surface features that are elevated portions or recessed portions so as to allow for the patterning of biological materials” by the patterning transfer element or the contact mask. Reeves discloses a mask that is to be worn on the face of a patient. The holes in the Reeves mask are designed to fit over the eyes, nose, and mouth of the patient. Therefore, these holes must follow constraints related to their number, size, and pattern that are dictated by the size and placement of a typical patient’s eyes, nose, and mouth. These constraints mean that the holes in Reeves’s masks cannot satisfy the limitation of being “elevated portions or recessed portions so as to allow for the patterning of biological materials” as that phrase is used in the present application since masks having holes of such number, size, and pattern so as to satisfy that limitation could not function as the kind of therapeutic masks that Reeves is directed to. There would be no motivation to modify the masks of Reeves so as to meet this limitation and therefore Reeves cannot make claims containing this limitation obvious.

Claims 2-9, 13-15, 55, 59, 63, 65, and 66

Claims 2-9, 13-15, 55, 59, 63, 65, and 66 are directed to contact masks that have “holes or cavities with a cross-sectional area of from approximately $1\ \mu\text{m}^2$ to approximately $2\ \text{mm}^2$.” Reeves discloses a mask that is to be worn on the face of a patient. Because the holes in Reeves’s mask are designed to fit over the eyes, nose, and mouth of the patient, those holes must follow constraints dictated by the size of a patient’s eyes, nose, and mouth. Accordingly, there would be no motivation to modify the Reeves mask to contain holes as small as approximately $1\ \mu\text{m}^2$ to approximately $2\ \text{mm}^2$ since holes that small could not fit over a patient’s eyes, nose, and mouth.

Furthermore, Reeves does not make obvious any of the present claims because Reeves is non-analogous art. In order for a reference to be considered analogous art, and therefore suitable for use in an obviousness rejection, that reference must satisfy one of the following two criteria:

- it must pertain to the field of the applicant’s endeavor; or

- it must be reasonably pertinent to the particular problem with which the inventor was concerned.

See In re Oetiker, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992):

In order to rely on a reference as a basis for rejection of the applicant's invention, the reference must either be in the field of the applicant's endeavor, or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.

Reeves satisfies neither of these criteria. The Applicant's field invention is directed to the provision of articles that can be used to pattern biological materials in a controlled manner, without the biological materials adhering to unwanted surfaces of the substrates on which the biological materials are deposited or to unwanted surfaces on the articles that are used to pattern the biological materials. For example, the specification, at page 3, line 10 to page 4, line 4, describes the need in the prior art for contact masks in which biological substances (e.g., cells) can be deposited in cavities of the contact mask without adhering to the top surface of the contact mask. Page 4, line 6-9 discloses that the present application provides a solution to this need. Example 3, at page 27, provides a working example of a contact mask of the present invention that meets this need.

Reeves is directed to therapeutic masks for treating facial wounds. Reeves field of endeavor clearly has nothing to do with the Applicant's field of endeavor. There is no mention in Reeves of the problem described above that was solved by the present invention. Thus, Reeves is non-analogous art.

Reeves in view of Wichterle

Claims 5, 6, 9, and 56 were rejected as being obvious over Reeves in view of Wichterle.

It can be seen from the discussion immediately above that Reeves does not make obvious any of the present claims because Reeves cannot be modified to include the two limitations discussed above. Wichterle cannot remedy the deficiencies of Reeves because Wichterle is directed to articles that either have no surface features (e.g., contact lenses), or, if they have surface features, have surface features that have no relation to the two limitations of the present claims discussed immediately above.

Wichterle is directed to crosslinked hydrophilic polymers and articles made from such polymers. The articles disclosed by Wichterle are: a lens (Col. 2, l. 2), a pessary (Col. 2, l. 3), a

dialyzer diaphragm (Col. 2, l. 3), membranes for dialysis (Col. 3, ll. 10-12), contact lenses (Col. 4, l. 8), ion exchangers (Col. 4, ll. 8-9), dental prostheses (Col. 4, l. 32), surgical implants (Col. 5, ll. 53-54), a block of hydrogel with absorbed penicillin (Col. 5, l. 74 to Col. 6, l. 2), pieces or sheets of a block copolymer without any specified surface features (Col. 6, ll. 23-24), and a hydrogel that can be used to replace conventional glasses (Col. 6, ll. 46-48).

None of the articles disclosed by Wichterle are suitable for patterning biological materials. The articles disclosed in Wichterle have nothing to do with the problems of patterning biological materials that are addressed by the present invention. Any surface features of the articles disclosed in Wichterle would not be expected to be suitable for patterning biological materials. Therefore, there would be no motivation to modify any surface features found in Wichterle in order to meet the limitations discussed above.

Also, there is no suggestion to combine Reeves and Wichterle since Reeves and Wichterle are directed to completely different fields of endeavor, neither of which has anything to do with the Applicant's field of endeavor.

Wichterle, like Reeves, is non-analogous art and thus, also like Reeves, cannot be properly used to support an obviousness rejection.

Wichterle

Claims 12 and 13 were rejected as being obvious over Wichterle.

The discussion immediately above shows that Wichterle, even combined with Reeves, does not make any of the present claims obvious. Therefore, *a fortiori*, Wichterle alone does not make any of the present claims obvious.

Remaining cited publications

None of the remaining publication cited in the Office Action, alone or in combination, make the present claims obvious. None of these publication are even remotely connected to the field of the present invention or to the problems solved by the present invention.

Atkinson is directed to contact lenses.

Ken discloses hydrogels of undisclosed structure that are inserted into the body to treat aneurysms.



Takezawa is directed to collagen hydrogels that are not disclosed as having holes or any other surface features that could be used to pattern biological material.

Powers is directed to transdermal drug delivery devices.

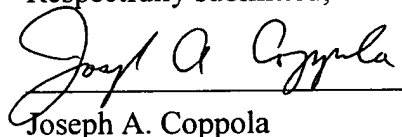
In view of the above, it is respectfully submitted that the present claims are not obvious and it is requested that these rejections be withdrawn.

The time for responding to the Office Action was set for October 25, 2003. Enclosed herewith is a Petition for the Extension of Time under 37 C.F.R. § 1.136(a) for a period sufficient to permit the filing of this response and charge any corresponding fees to Kenyon & Kenyon's Deposit Account No. 11-0600.

The Applicants hereby also make a Conditional Petition for any relief available to correct any defect seen in connection with this filing, or any defect seen to be remaining in this application after this filing. The Commissioner is authorized to charge Kenyon & Kenyon's Deposit Account No. 11-0600 for the Petition fee and any other fees required to effect this Conditional Petition.

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Respectfully submitted,


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